

CHICAGO
Electric® Power Tools

6 / 2 AMP, DUAL RATE BATTERY CHARGER

Model 45005



OPERATING INSTRUCTIONS



Due to continuing improvements, actual product may differ slightly from the product described herein.



3491 Mission Oaks Blvd., Camarillo, CA 93011

Visit our Web site at <http://www.harborfreight.com>

**TO PREVENT SERIOUS INJURY, READ AND UNDERSTAND
ALL WARNINGS AND INSTRUCTIONS BEFORE USE.**

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For technical questions and replacement parts, please call 1-800-444-3353.

Specifications

Power Requirements	120 VAC, 60 Hz, 1.3 amps
Output Power	6* & 2* amps at 12 VDC; 6* amps at 6 VDC
Battery Cables	6' 7"; 18 AWG
Line Cord	6' 6" long; 3-prong plug
Features	Ammeter Self-resetting circuit breaker

***Amperage is only present when the unit is connected to a battery.**

Save This Manual

You will need the manual for the safety warnings and precautions, assembly instructions, operating and maintenance procedures, parts list and diagram. Keep your invoice with this manual. Write the invoice number on the inside of the front cover. Keep the manual and invoice in a safe and dry place for future reference.

GENERAL SAFETY RULES



WARNING!

READ AND UNDERSTAND ALL INSTRUCTIONS
Failure to follow all instructions listed below may result in
electric shock, fire, and/or serious injury.
SAVE THESE INSTRUCTIONS

WORK AREA

1. **Keep your work area clean and well lit.** Cluttered benches and dark areas invite accidents.
2. **Do not operate equipment in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust.** Equipment creates sparks which may ignite the dust or fumes.
3. **Keep bystanders, children, and visitors away while operating equipment.** Distractions can cause you to lose control.

ELECTRICAL SAFETY

4. **Grounded equipment must be plugged into an outlet properly installed and grounded in accordance with all codes and ordinances.** Never remove

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- the grounding prong or modify the plug in any way. Do not use any adapter plugs. Check with a qualified electrician if you are in doubt as to whether the outlet is properly grounded.** If the equipment should electrically malfunction or break down, grounding provides a low resistance path to carry electricity away from the user.
5. **Double insulated equipment is equipped with a polarized plug (one blade is wider than the other). This plug will fit in a polarized outlet only one way. If the plug does not fit fully in the outlet, reverse the plug. If it still does not fit, contact a qualified electrician to install a polarized outlet. Do not change the plug in any way.** Double insulation eliminates the need for the three wire grounded power cord and grounded power supply system.
 6. **Avoid body contact with grounded surfaces such as pipes, radiators, ranges, and refrigerators.** There is an increased risk of electric shock if your body is grounded.
 7. **Do not expose equipment to rain or wet conditions.** Water entering equipment will increase the risk of electric shock.
 8. **Do not abuse the Power Cord.** Never use the Power Cord to carry the equipment or pull the Plug from an outlet. Keep the Power Cord away from heat, oil, sharp edges, or moving parts. Replace damaged Power Cords immediately. Damaged Power Cords increase the risk of electric shock.
 9. **When operating equipment outside, use an outdoor extension cord marked "W-A" or "W".** These extension cords are rated for outdoor use, and reduce the risk of electric shock.

PERSONAL SAFETY

10. **Stay alert. Watch what you are doing, and use common sense when operating equipment. Do not use equipment while tired or under the influence of drugs, alcohol, or medication.** A moment of inattention while operating equipment may result in serious personal injury.
11. **Avoid accidental starting. Be sure the Power Switch is off before plugging in.** Plugging in equipment with the Power Switch on, invites accidents.
12. **Use safety equipment. Always wear eye protection.** Dust mask, nonskid safety shoes, hard hat, or hearing protection must be used for appropriate conditions. Always wear ANSI approved safety goggles and a dust mask/respirator when using or performing maintenance on this equipment.

EQUIPMENT USE AND CARE

13. **Do not force the equipment. Use the correct equipment for your application.** The correct equipment will do the job better and safer at the rate

for which it is designed. Do not use the equipment for a purpose for which it is not intended.

14. **Do not use the equipment if the Power Switch does not turn it on or off.** Any equipment that cannot be controlled with the Power Switch is dangerous and must be replaced.
15. **Disconnect the Power Cord Plug from the power source before making any adjustments, changing accessories, or storing the equipment.** Such preventive safety measures reduce the risk of starting the equipment accidentally. **Always unplug the equipment from its electrical outlet before performing any inspection, maintenance, or cleaning procedures.**
16. **Store idle equipment out of reach of children and other untrained persons.** Equipment is dangerous in the hands of untrained users.
17. **Maintain equipment with care.** Do not use damaged equipment. Tag damaged equipment "Do not use" until repaired.
18. **Check for breakage of parts and any other condition that may affect the equipment's operation. If damaged, have the equipment serviced before using.** Many accidents are caused by poorly maintained equipment.
19. **Use only accessories that are recommended by the manufacturer for your model.** Accessories that may be suitable for one piece of equipment may become hazardous when used on another piece of equipment.

SERVICE

20. **Equipment service must be performed only by qualified repair personnel.** Service or maintenance performed by unqualified personnel could result in a risk of injury.
21. **When servicing equipment, use only identical replacement parts. Follow instructions in the "*Inspection, Maintenance, And Cleaning*" section of this manual.** Use of unauthorized parts or failure to follow maintenance instructions may create a risk of electric shock or injury.

Additional Battery Charger Safety Precautions

1. This Battery Charger must only be used on lead-acid, rechargeable type batteries. Do not use this Battery Charger to charge household, dry-cell batteries. Dry-cell batteries may explode causing personal injury or property damage.
2. Do not use the Battery Charger as a low voltage system power supply except in automotive applications.
3. Do not try to start the automobile engine when the Battery Charger is connected to the battery. It may damage the unit.

4. Always charge a lead-acid battery in a well ventilated area as explosive gases may be produced during charging.
5. Place the Battery Charger as far away from the battery as possible during charging.
6. Do not attempt to charge a battery with frozen battery fluid.
7. Be careful not to drip any battery fluids in or around the Battery Charger. Damage to the charger can occur.
8. Never touch the Battery Charger cable clamps together when the charger is plugged in; touching the cable clamps together may cause personal injury.
9. Avoid touching your eyes after working with a lead-acid battery. Wash hands thoroughly with soap and water. If battery fluids contact the skin, face, or eyes, immediately flush with plenty of fresh water. Then, contact a doctor.
10. Never smoke around a charging battery.
11. Make all Cable Clamp connections before plugging in the Battery Charger.
12. Remove all metal objects (including tools and other personal objects, i.e., watch) from around the battery being charged.
13. Make sure battery is vented and that it's a maintenance free (non-fillable) battery. Make sure vents are clear and dirt free.
14. Use this product in accordance with the battery's and vehicle's instruction manual recommendations, safety warnings and charging instructions.
15. Never leave Battery Charger unattended.
16. Batteries can explode under certain conditions; excessive heat and/or poor ventilation can cause explosive gas buildup and battery explosion. Surges in electrical power supply could possibly cause battery explosion. Battery Charger should be plugged into a surge protection device.

GROUNDING

WARNING!

Improperly connecting the grounding wire can result in the risk of electric shock. Check with a qualified electrician if you are in doubt as to whether the outlet is properly grounded. Do not modify the power cord plug provided with the tool. Never remove the grounding prong from the plug. Do not use the tool if the power cord or plug is damaged. If damaged, have it repaired by a service facility before use. If the plug will not fit the outlet, have a proper outlet installed by a qualified electrician.

GROUNDED TOOLS: TOOLS WITH THREE PRONG PLUGS

1. Tools marked with "Grounding Required" have a three wire cord and three prong grounding plug. The plug must be connected to a properly grounded outlet. If the tool should electrically malfunction or break down, grounding provides a low resistance path to carry electricity away from the user, reducing the risk of electric shock. (**See Figure A.**)
2. The grounding prong in the plug is connected through the green wire inside the cord to the grounding system in the tool. The green wire in the cord must be the only wire connected to the tool's grounding system and must never be attached to an electrically "live" terminal. (**See Figure A.**)
3. Your tool must be plugged into an appropriate outlet, properly installed and grounded in accordance with all codes and ordinances. The plug and outlet should look like those in the following illustration. (**See Figure A.**)



FIGURE A

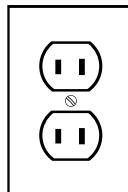
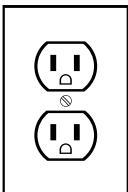


FIGURE B

DOUBLE INSULATED TOOLS: TOOLS WITH TWO PRONG PLUGS

4. Tools marked "Double Insulated" do not require grounding. They have a special double insulation system which satisfies OSHA requirements and complies with the applicable standards of Underwriters Laboratories, Inc., the Canadian Standard Association, and the National Electrical Code. (**See Figure B.**)

5. Double insulated tools may be used in either of the 120 volt outlets shown in the following illustration. (**See Figure B.**)

EXTENSION CORDS

1. **Grounded** tools require a three wire extension cord. **Double Insulated** tools can use either a two or three wire extension cord.
2. As the distance from the supply outlet increases, you must use a heavier gauge extension cord. Using extension cords with inadequately sized wire causes a serious drop in voltage, resulting in loss of power and possible tool damage. (**See Figure C.**)
3. The smaller the gauge number of the wire, the greater the capacity of the cord. For example, a 14 gauge cord can carry a higher current than a 16 gauge cord. (**See Figure C.**)
4. When using more than one extension cord to make up the total length, make sure each cord contains at least the minimum wire size required. (**See Figure C.**)
5. If you are using one extension cord for more than one tool, add the nameplate amperes and use the sum to determine the required minimum cord size. (**See Figure C.**)
6. If you are using an extension cord outdoors, make sure it is marked with the suffix "W-A" ("W" in Canada) to indicate it is acceptable for outdoor use.
7. Make sure your extension cord is properly wired and in good electrical condition. Always replace a damaged extension cord or have it repaired by a qualified electrician before using it.
8. Protect your extension cords from sharp objects, excessive heat, and damp or wet areas.

RECOMMENDED MINIMUM WIRE GAUGE FOR EXTENSION CORDS*					
NAMEPLATE AMPERES (At Full Load)	EXTENSION CORD LENGTH				
	25 Feet	50 Feet	75 Feet	100 Feet	150 Feet
0 - 2.0	18	18	18	18	16
2.1 - 3.4	18	18	18	16	14
3.5 - 5.0	18	18	16	14	12
5.1 - 7.0	18	16	14	12	12
7.1 - 12.0	18	14	12	10	-
12.1 - 16.0	14	12	10	-	-
16.1 - 20.0	12	10	-	-	-

* Based on limiting the line voltage drop to five volts at 150% of the rated amperes.

SYMBOLS

	Double Insulated
	Canadian Standards Association
	Underwriters Laboratories, Inc.
	Volts Alternating Current
	Amperes
noxxxx/min.	No Load Revolutions per Minute (RPM)

Unpacking

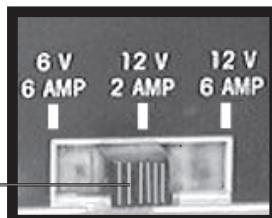
When unpacking, make sure that the Battery Charger is intact and undamaged. If any parts are missing or broken, please call Harbor Freight Tools at the number on the cover of this manual.



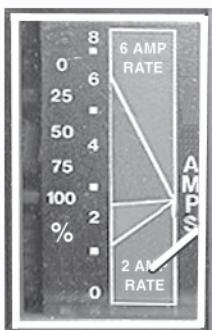
Operation

1. Place the Battery Charger about six feet from the battery being charged.
2. If the battery to be charged is in a vehicle, verify that the ignition is off, remove vehicle's cables from battery, then connect the positive (Red with +) Cable Clamp to the positive (+ or P) terminal of the battery.
If necessary, clean the battery terminals. Wiggle the Cable Clamp on the battery terminal to get a good connection.
3. Connect the negative (Black with -) to an unpainted, solid metal portion of the vehicle.
If the battery is outside the vehicle, connect the negative (black with -) Cable Clamp to the negative battery terminal.
4. Set the Battery Charger switch to the proper setting for the type battery being charged. Refer to the table on the next page.

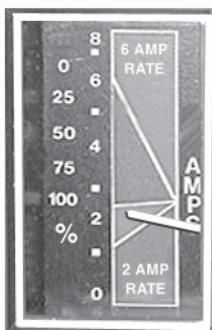
Battery Voltage / Amps	Switch Setting	Charging Time	Typical Battery Uses
12 volt, 6 amps	Right (12 volt, 6 amp)	6 to 8 hours	Vehicles, machinery with large engines
12 volt, 2 amps	Center (12 volt, 2 amp)	3 to 8 hours	Motorcycles, snowmobiles, small engines; Drip charge battery; For batteries rated at 28 amphours or less.
6 volt, 6 amps	Left (6 volt, 6 amp)	6 to 8 hours	Vehicles, machinery with large engines using 6 volt battery



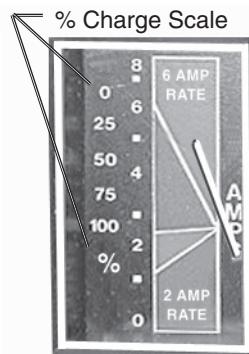
- With the Battery Clamps in place, and the Mode Switch correctly set, plug the 3-prong line cord into a grounded electrical outlet or extension cord.
- The Battery Charger is now supplying charging current to the battery. View the Ammeter to see the amount of charging current.



Fully Charged



Charging at full 2 amps



Charging at full 6 amps

The ammeter displays the amount of current draw of the battery. As the battery charges, it draws less current. The ammeter indicator moves down as the battery charges. When its reaches the green area of the ammeter, the battery is charged. When the charge setting is 12 volts, 6 amps, the percentage (%) charge scale can be read as an indication of the charge.

7. When the battery is fully charged, the Battery charger will automatically shut off. **Note: When set in 6 volt mode, the Battery Charger will not automatically shut off; it must be manually turned off.**
8. Remove the negative (black) Cable Clamp from the battery.
9. Remove the positive (red) Cable Clamp from the battery.

Maintenance

1. Using a clean cloth, wipe the Cable Clamps and charger of all grease and dirt.
2. Coil all cables.
3. Store the Battery Charger in a clean and dry location.
4. If any cable insulation becomes cracked and exposes copper wire, have it repaired or replaced by a qualified technician.

Troubleshooting

Symptom	Probable Causes	Remedy
Maximum ammeter reading	Defective battery	Check and/or replace battery
No ammeter reading	No power to charger	Check power cable and outlet connections
	Battery cable clamps not connected to battery properly	Clean battery terminals and reset cable clamps
	Defective battery	Check and/or replace battery
Charging current not to full output	Battery is partially charged	Continue charging
	Defective battery, will not hold full charge	Check and/or replace battery
Ammeter needle moves up to full charge, then drops to zero. Makes clicking noise.	Battery is completely dead	Continue charging battery. Charger will continue to reset itself until the battery charge reaches a chargable level.
	Defective battery	Check and/or replace battery
	Charger is resetting itself after circuit breaker overload	Wait until charger automatically resets itself.

Note: No replacement parts are available for the Battery Charger.